THE AMERICAN SOCIETY FOR QUALITY
FINAL REPORT – PHASE 1 RESEARCH

Toward an Operational Definition of Quality Government

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"Politicians should not regulate people, but stimulate them."
~ Dr. Kaoru Ishikawa

INTRODUCTION:

National economic and industrial policies contribute to the well being of a nation through their ability to stimulate the growth of local industries which is the foundation of a nation's gross domestic product. These policies establish a framework and infrastructure within which private firms exercise competitive decisions that drive a nation's economic growth. For public government to have an effective economic and industrial policy it must have a sound theory for how it affects private firms. The macroeconomic effect on a nation and the microeconomic impact on its firms are not independent – they operate together as a dynamic system. Quality is a key driver for economic expansion, as measured by productivity growth and profitability in the private sector. Quality drives microeconomic growth when it is part of national economic and industrial policy. Quality government is also important in a microeconomic sense in the way that a government chooses to operate. If a government is operated efficiently, effectively and economically while it also develops a strong competitive national infrastructure, then it has provided 'good governance' for its people – an opportunity to have a standard of living that ranks among the global leaders, is economically competitive and is satisfying to its citizens.

National competitiveness was defined by the American Council on Competitiveness in a 1987 study:

> "The degree to which a nation can, under free and fair market conditions, produce goods and services that meet fair tests in international markets while simultaneously maintaining or expanding the real income of its citizens."

This definition describes the macro-economic dimension of competitiveness, and may be adapted to describe micro-economic competitiveness by changing the emphasis slightly:

> "The degree to which a firm can, under free and fair market conditions, produce goods and services that meet consumer tests in its chosen markets, while simultaneously maintaining or expanding the real income of its

[1] This paper was prepared by Gregory H. Watson and Jeffrey E. Martin of Business Systems Solutions, Inc. for the Quality in Government Subcommittee of the American Society for Quality Research Committee. Mr. Watson is a past President and Fellow of ASQ with significant experience in government quality in the early Clinton-Gore 'reinventing government' initiative as well as with a number of national governments. He is the chair of the ASQ Research Committee on Quality in Government. Mr. Martin was a member of the New York quality improvement team where he led efforts in small business productivity, labor relations and the state quality award. He also serves as quality advisor to the Department of Revenue in the State of Florida.

shareholder-owners." [2]

The competitiveness of nations supports development of an operational definition for quality in government; however, this second definition of competitiveness, using a micro-economic lens, must be adapted when applied to government. Governmental services do not operate under "free and fair market conditions," nor in general do they meet "consumer tests" for choice, nor do they "expand the real income of its shareholder-owners." Despite these shortfalls it is clear that governments are service organizations and that any operational definition of quality in government must apply to its own service practices as relevantly as they impact macro-economic elements of the infrastructure that stimulate business through government's economic and industrial policies.

Economics describes how scarce resources are used to produce valuable commodities and distribute them to society. A consumer's choice is made based upon a value proposition – that the quality of features (for goods or services) of a given product are superior over available choices and meet or exceed their requirement over competitive choices at a price point that represents value to the potential customers (it is considered to be 'worth what they pay for it'). In a commercial environment this may be summarized using the phrase 'better, faster, and cheaper.' However, when a value proposition is stated this way many government officials react by thinking this concept does not apply as they have no profit dimension in their operating model. In a purely 'capitalist' economy a customer has freedom to choose all goods and services – a luxury that is not afforded to most customers of government, as government tends to mandate which of its services are required and therefore the private sector is not allowed to compete with its free market alternatives. However, most government services have 'latent competition' in the form of free market services that would compete, if the government removed its mandate for required services. The choice of which government services are mandated is political and may be changed when the good of society is interpreted differently by new leaders.

One example of an attempt to define 'quality in government' occurred in the form of the Clinton-Gore administration's "reinventing government" initiative which responded to their campaign slogan "putting the customer first" (where customers were identified as citizens) and give these customers a government that would be more effective (high quality and professional), efficient (deregulated and digital), economic (costs less), and ethical (honest and transparent). These fundamental requirements were phrased in the following statements which can be identified as having an emphasis on either 'process' (means – processes or programs that achieve the results) or 'results' (ends – performance measures of results):

- Government that costs less – result
- Quality government – both process and result
- Professional government – process
- Digital government – process

[2] Adapted from the 1987 ***Report on Competitiveness*** by the Washington, DC based American Council on Competitiveness.

- Deregulated government – process
- Honest and transparent government – both process and result

While these characteristics are desirable, they do not constitute an operational definition of quality in government. One reason is that they confuse the ends and the means – the results from implementation with the approaches to yield these results. Many of the world's national quality award programs make a clear distinction between the approach to achieve performance excellence, the activities undertaken to deploy that approach, and the results that are achieved from deployment of the approach. In addition, quality is typically understood from two distinct perspectives: quality facing the customer (sometimes this is viewed as merely service quality) that represents the external activities involved to meet constituent needs (this includes all stakeholders such as customers, suppliers, communities and governments) and quality that assures internal performance (managing by process the performance of an organization's quality management system). These elements must be combined within the context of the macro- and micro-economics focus of government in order to establish the proper framework for defining quality.

MACROECONOMIC VS. MICROECONOMIC FOCUS:

What practical distinction can be made between a macroeconomic focus on quality and a microeconomic focus on quality? The macroeconomic focus describes how quality is a contributor to the good of society as produced by the efforts of the government: it is quality of government – a focus on the results. The microeconomic focus describes how quality is a contributor to producing the efforts of government on behalf of society – a focus on the process of effectively, economically and efficiently designing, developing and delivering these outcomes as a result of government processes and infrastructure. Macroeconomic quality may be thought of as "quality of government" where the focus is on results while microeconomic quality may be thought of as "quality in government' in emphasis on the approach that government has taken to producing its outcomes and then deploying this approach within the context of its programs and services. Thus, the focus on macroeconomic quality defines the programs to emphasize for achieving an improved quality of life for society while the focus on microeconomic quality defines an operating philosophy and methodology for implementation in a way that makes the best use of the collective resources of society. As a result of these considerations the following breakdowns of these two focus areas is presented as a basis for developing an operational definition of quality government.

MACROECONOMIC QUALITY:

This is the role of the government as stimulator or catalyst for achieving economic viability as a nation – what a can a government do to create the environment that is most conducive to economic growth – through the design and implementation of fiscal, social and industrial policies? What can government do to build the quality of its nation's businesses and enhance their ability to conduct international trade? There are four policy areas which governments may use as leverage to promote their national industries: product and service quality standards; process quality and operational productivity;

business quality and innovation; and excellence in global competitiveness. What specific actions can be taken in each of these four areas to improve a nation's business environment? In a benchmarking study conducted by Business Systems Solutions, Inc. for Vice President Gore's National Performance Review Office a number of examples were identified of governmental actions or programs that have the potential to stimulate national competitiveness by making interventions in each of these four elements of a national quality policy. Active programs in each of these areas are in the national self-interest of every nation. By providing its national industries with better information, more educated people, and standards for comparison, a government provides the infrastructure for improved management by fact at the microeconomic level of the firm for making strategic choices and conducting business operations. Some areas to address in forming an operational definition of quality include:

Product Quality and Service Standards.

- National standard program that a government establishes for measurement and evaluation of both product performance and safety;
- National educational policy that a government establishes to prepare its citizens to be productive participants in its labor force; and
- Performance measurement system that the government uses to appraise its private sector of its relative, global economic and industrial competitive performance.

Process Quality and Operational Productivity.

- National standards registrar to manage the accreditation of local businesses for compliance with global quality standards (e.g., ISO9000, ISO14000, etc.);
- National investment and tax policy to encourage business investment in research that generates unique intellectual property and creates productivity-enhancing physical plants as a result of well-directed capital resources; and
- Incentive recognition to encourage specific business behaviors that encourage business improvement aligned with the national economic goals (e.g., a national award for export excellence to acknowledge and recognize a firm's contribution and achievement in improving the nation's balance of trade).

National Culture for Business Quality and Innovation.

- National quality award (e.g., the Japanese Deming Prize and the Malcolm Baldrige National Quality Award in the United States). A national quality award encourages the private sector to adapt business improvement lessons that have been learned from 'world class' companies. The purpose of this award is not only recognition of individual companies, but also identification and exposure of 'good practices' for other organizations to

consider as process improvements;
- National award for innovation to encourage the private sector to accelerate their interests in leading edge technology in their industrial sectors; and
- National policy for protection of intellectual property rights. This initiative reduces intellectual piracy, protects the creative genius of each nation's citizens, and enhances the competitiveness of its businesses by protecting emerging industries from 'copy cat' technologies that are developed by more established, but less inventive, businesses.

National Monetary, Development, Trade, and Environment policies.

- Fiscal policy needs to be conducted in a manner that encourages capital investment to expand industry and investment in research leading to new product development;
- Development policy needs to encourage multi-national companies to build local facilities for production and distribution of goods in order to expand both the national production base and the infrastructure for distribution;
- Trade policy needs to encourage the exchange of goods and elimination of tariffs and trade barriers; and
- Environmental policy needs to encourage product development to support a sustainable global environment thereby reducing the future cost impact of current product development.

MICROECONOMIC QUALITY:

The application of quality-related initiatives to improve the way government is managed is not new. Some of the milestones in the application of quality to government in the United States include:

- In the Second World War statisticians and engineers were employed in the industrial efforts supporting the war to improve the quality of weapon systems and transport. These efforts were documented by the War Production Board who encouraged the formation of a professional society to manage and improve upon this new quality body of knowledge. This organization has become known as the American Society for Quality.
- In the 1970s the United States Senate established the Senate Productivity Awards to encourage improvement in industrial production capability in the private sector.
- In the early 1980s the National Aeronautical and Space Administration established the Lowe Award with a set of criteria that was used to recognize excellence in the deployment of quality methods in NASA organizations.
- Also in the 1980s the President's Award was established to recognize excellence in federal government agencies.

- Throughout the 1980s the military services of the United States commenced a number of quality-related initiatives to improve both operations and logistics capability.
- In the late 1980s the Malcolm Baldrige National Quality Award was launched to recognize excellence in private sector businesses that was achieved by application of quality methods and principles.
- The formal introduction of quality concepts and principles into the entire government occurred early in the Clinton-Gore administration with its 'reinventing government' initiative that was managed out of the Vice President's National Performance Review Office. This effort built on their campaign slogan "Putting the customer first" and it has served as a role model for other governments through a series of conferences that were initially sponsored by the NPR Office beginning in 1999. [Note that some of America's best companies supported this effort by contributing staff time and internal best practice for government use (special recognition of the chief executives of Hewlett-Packard (John Young) and Xerox (Paul Allaire) is warranted as they encouraged the leaders of the Clinton administration to adapt commercial quality practices and apply them in the context of government).]

The current business emphasis on quality is described by quality principles that are used to assess performance results that are based on implementation of management practices; quality methods applied to build process discipline and encourage innovation; and quality documentation that assures standardized work is performed consistently over time by the organization. These quality management initiatives focus on standards of management (ISO9000 for the entire quality management system and CSMS2003 for the customer service management system), and application of commercial practices (such as statistical problem solving and design of products and services (Six Sigma), and adaptation of best practice into work processes (business excellence and benchmarking)). Each of these quality initiatives provides a valuable contribution to sustainable business performance and the principles that they are based upon contribute greatly toward understanding the foundation upon which an operational definition of quality government can be defined.

Standards of Management for Quality Performance.

- ISO9000:2000 identifies eight quality management principles that should be embedded into a quality management system to define what an organization should do to consistently provide products or services that meet customer, market, and statutory or regulatory requirements. There are five sections in the standard that present areas to be addressed in applying these principles: quality management systems, management responsibility, resource management, product realization and measurement, analysis and improvement. The eight principles to be applied describe a recommended system for improving organizational results: [3]

[3] These principles were referenced from the website of the International Standards Organization on May 30, 2003 (http://www.iso.org/iso/en/iso9000-14000/iso9000/qmp.html).

- Customer focus – organizations depend on their customers and therefore should understand current and future customer needs, should meet customer requirements and strive to exceed customer expectations.
- Leadership – leaders establish unity of purpose and direction of the organization. They should create and maintain the internal environment in which people can become fully involved in achieving the organization's objectives.
- Involvement of people – people at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization's benefit.
- Process approach – a desired result is achieved more efficiently when activities and related resources are managed as a process.
- System approach to management – identifying, understanding and managing interrelated processes as a system contributes to the organization's effectiveness and efficiency in achieving its objectives.
- Continual improvement – continual improvement of the organization's overall performance should be a permanent objective of the organization.
- Factual approach to decision-making – effective decisions are based on the analysis of data and information.
- Mutually beneficial supplier relationships – an organization and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value.

Government as a Service Organization.

- In many ways all organizations are service organizations whether they develop products or not – they must interact with customers and deliver service whether it is accompanied by hardware or not. The microeconomic focus on a firm must therefore define the governance and operational aspects of quality for a service organization. This focus area can be addressed using a self-assessment process as defined and described in CSMS:2003 Customer Service Management Systems, a recent standard developed by the eCommerce Standards Board (and available at www.asq.org). This standard describes the set of principles for assessing the goodness of service quality: [4]

  - Operating philosophy encourage employee sensitivity toward customers,
  - Customers interact with the performance of processes at 'touch points,'
  - Competitive customer measurements observe variation over time,
  - Service level agreement guarantees are based on objective metrics,
  - Customer requirements are reviewed regularly to assure competitiveness,
  - All management levels are actively engaged in customer support,
  - The target for performance achievement is zero customer defections,
  - A closed loop customer complaint system is tied to performance rewards,
  - Employee incentives are tied to customer engagement measurements,

[4] These principles come from the CSMS:2003 Customer Service Management Standard with permission of the eCommerce Standards Board which grants the right to use these principles for public education.

- Service improvement strategy is linked to capital resources allocation, and
- Annual improvement projects deliver performance gains to the bottom line without loss of customer satisfaction and other measures of external customer perception.

Performance Excellence for the Public Sector

- Business excellence requirements are specifically defined by the criteria for the Malcolm Baldrige National Quality Award. [5] The Baldrige award criteria identify seven categories that must be designed and managed in any business system in order for its management to achieve and sustain the highest levels of excellent performance. Management applies the information contained in areas to address in these categories to create an architecture of vision, values, culture and methods that defines the substance in an organization's approach to achieve excellence, describe how that approach is deployed throughout the entire organization and establish how their business results are attributed to the deployment of this approach to quality improvement. The seven category areas for management attention are: leadership, strategic planning, customer and market focus, information and analysis, human resource focus, process management and business results. The underlying philosophy of the Malcolm Baldrige National Quality Award criteria is described by a set of guiding principles that influenced the thinking of ISO9000:2000 and CSMS:2003. The set of guiding principles contained in the Baldrige criteria is more comprehensively stated than those of ISO9000:2000 and CSMS:2003. These principles are summarized below: [6]

  - Visionary leadership – an organization's senior leaders should set strategic direction and create customer focus, clear and visible values, and high expectations that balance the needs of all stakeholders (customers, owners, employees, and the public) and senior leaders should be role models for the behavior that they expect from their organization.
  - Customer driven excellence – customers should be the focus of the current and future efforts of the business in creating products and services as well as performing the routine work that delivers these products and services in a consistently excellent manner that exceeds competitive performance.
  - Organizational and personal learning – continuous improvement and adaptation to change should result from a focus on both organizational and personal learning which renew the core competence of the organization and enhance the value of its performance to customers by becoming more responsive to change, adaptive and efficient.
  - Valuing employees and partners – as organizational success depends ever increasingly on the knowledge, skills, creativity, and motivation of its

[5] The criteria for the Malcolm Baldrige National Quality Award are available from the National Quality Office at the National Institute of Science and Technology (www.quality.nist.gov).
[6] A PDF version of the complete Baldrige award criteria may be downloaded a link at the home page of the www.quality.nist.gov website.

employees and partners, organizations should build internal and external partnerships to assure that it can better accomplish its overall goals.

- Agility – to keep pace with ever-shorter business cycles and trends in the development of new technology, organizations should develop a capacity for rapid change and flexibility in all critical performance dimensions.
- Focus on the future – to assure sustainable growth, market leadership and continued competitiveness organizations should focus on the future to understand the short- and long-term factors that affect performance.
- Managing for innovation – organizations should integrate meaningful change in all aspects of their business, systems, processes, services and products in order to create new value for the organization's stakeholders.
- Management by fact – organizations should depend on measures of their performance and analyze trends for appropriate comparisons that indicate areas for improvement from the strategic level of business to the operating level of performance.
- Social responsibility – business leaders should stress responsibilities to the public, ethical behavior, and the need to practice good citizenship.
- Focus on results and creating value – performance measures should be designed to indicate the key results areas required by all stakeholders for both short-term performance and long-term strength.
- Systems perspective – the values, guidelines and criteria form a system that should be integrated, synthesized and aligned through the strategic actions of management and translated into objectives and action plans.

Benchmarking Commercial Best Practice

- The business excellence self-assessment described by the criteria for the Malcolm Baldrige National Quality Award (and other related award schemes) provide a generic checklist for organizational wellness based on best practices observed at a variety of leading companies throughout the world. While a business self-assessment describes <u>what</u> areas of the organization must be improved, it does not specify <u>how</u> to improve these areas. Such a prescription is left to the management team's ability to self-regulate their business. Like these business excellence self-assessment criteria, standards used to promote quality management (e.g., ISO9000:2000 and CSMS:2003) define elements of good practice in establishing the architecture for a quality management system and provide a framework to define a minimum acceptable quality system. When an organization pursues ISO9000 or CSMS2003 they discover that these standards are compatible with the management philosophy of the business excellence model and they require a continuing operational discipline to address the regular third-party audits by developing highly consistent work processes. However, ISO9000 and CSMS2003 are also non-prescriptive in that they do not identify specific practices or choices of management to improve processes or perform its work more effectively – they also identify areas to address in building a system for managing quality processes to produce desired results. Recognizing the need for further amplification,

business has seen the rise of three other quality-related systems that can be addressed by government through adaptation of commercial best practices for: strategic benchmarking to identify the specific management practices that lead to competitive advantage, the balanced scorecard and customer dashboard measurement systems, and Six Sigma methodology for problem solving, process management and product (or service) design. These three methods are described in a brief synopsis below:

Strategic Benchmarking

- Strategic benchmarking is the practice of identifying those business practices that differentiate business performance and learning from leading organizations how to execute these processes better your toughest competitors. [7] Strategic benchmarking should be part of an organization's strategic planning process as it generates organizational learning, identifies areas of improvement and provides lessons learned about how to restructure and focus change management efforts that can make a continuing performance difference. However, strategic benchmarking lessons learned should not be blindly adopted; they must be adapted to an organization's cultural environment and also enhanced using 'creative imitation' so that new technologies and the innovative energy of the organization can be integrated to formulate new organizational directions.

Balanced Scorecard and Customer Dashboard

- Benchmarking measures should tie into the organization performance management system as defined by its balanced scorecard of reporting measures or customer dashboard of operational measures. [8] Balanced scorecards define a measurement perspective that reflects concerns and interests of all organizational stakeholders while a customer dashboard focuses on delivery of customer satisfaction through performance of internal work processes to consistently deliver exceptional customer experiences. In the process of developing these business measurement systems a set of principles has emerged that identify best practice for performance measurement:

  - Performance measures must be actionable
  - Performance measures must be auditable by a third party
  - Performance measures must be standardized across operating units
  - Performance measures must be reliable and indicate desired results
  - Performance measures must be timely indicators of performance
  - Performance measures must be capable of external validation

[7] Gregory H. Watson, ***Strategic Benchmarking*** (New York: John Wiley and Sons, 1993).
[8] Robert S. Kaplan and David P. Norton, ***The Balanced Scorecard: Translating Strategy into Action*** (Boston: Harvard Business School Press, 1996).

- Performance measures must describe defects, cost and time
- Performance measures must be used by business managers
- Performance measures must predict final, intended business results
- Performance measures must reflect expectations of all stakeholders
- Performance measures must be tied to managerial accountability

Six Sigma Quality Performance

- Six Sigma is different from business excellence and ISO9000:2000 in one critical aspect – it defines a highly prescriptive, rigorous approach for statistically analyzing processes, services and products in order to establish discipline in work processes and assure innovative design of core business factors. [9] Six Sigma includes many of the quality tools, techniques and methodologies that have been developed over the past fifty years, but they have been integrated into a system of analysis that digs into the root causes of problems to identify what it takes to deliver sustainable performance results. The recognition of the value of a Six Sigma program is so extensive that almost all of the Fortune 500 firms have implemented a version of it and integrated it with their system of management. Savings that have been directly related to Six Sigma business improvement projects have been extensive – to the level of a billion dollars and more in the largest corporations. The extensibility of Six Sigma has also been demonstrated as it has cascaded down to small and medium size enterprises (SME) as well as some healthcare and government organizations.

Commercial leaders integrate all of these quality initiatives into their business system in order to build a sustainable performance capability – the challenge to government leaders will be to identify appropriate commercial practices and to translate them into operational methods that are suitable for the public sector.

OPERATIONAL DEFINITION OF QUALITY IN GOVERNMENT

A first step toward understanding best quality practices in government is to define what it means to apply quality in the context of the 'business' of government. An operational definition of quality government must address both aspects of quality in government, a process for delivering quality through the actions of people, and quality of government, the net effect of these actions in terms of the quality of life provided to society. Thus, an operational definition of quality government must distinguish between the means and the end of quality. The means or methods of quality government should identify the best practices, successful processes and innovative programs that have been demonstrated to achieve the end of good government. The end or outcome of quality government should

[9] Mikel J. Harry and Richard Schroeder, ***Six Sigma: The Breakthrough Management Strategy*** (New York: Doubleday, 2000).

be evaluated using a set of performance measures and benchmarked against comparative performance results to assess quantitatively the goodness of government. The means and end of quality are part of a system to deliver quality to the citizens of government.

The beginnings of an operational definition for quality government may be stated as:

> ***Quality government is the set of practices and processes defining the approach taken to improve the quality of life of a nation's citizens and the comprehensive deployment throughout all governmental agencies of this approach in order to deliver prosperous, long-term, and equitable performance results to public and private stakeholders in an ethical manner.***

However, this operational definition quality government is clearly not complete. Each of its key terms must also be operationally defined and illustrated by best practice so these elements may be clearly understood and be transferable across governments. This is the objective of the remainder of this ASQ research project.

CONCLUSIONS:

It is clear that the principles of quality are an imperative for good government. Quality must become a central element of an apolitical governmental agenda alongside other governmental values such as security and financial well-being. Quality it must be part of the culture and technology of government that endures past changes in regimes or political parties. The emphasis on quality must deliver "quality of government" by providing the results of "quality in government" processes. The political agenda of parties should focus on the 'what' and 'why' of their platform for society, while the quality agenda of the government should focus on the 'how' or the methods of government and the 'how much' or performance indicators of the 'what' that is delivered to the public – the customers of government. As political considerations build consensus among a constituency for shared action, in the same way quality considerations should build consensus among government's customers regarding the methods and style of operation of government. The challenge faced by all governments will be to separate the political and professional elements of government and assure that the quality program remains in the professional side, while supported by the political side. Only then can society as a whole win through the sustained efforts of all citizens to deliver long-term value and benefit to the citizens.

NEXT STEPS:

This report documents the first phase of this study by the American Society for Quality in an ongoing Research Project on quality in government. This effort comprises a two-year study of government quality to be conducted under the guidance of the Government Quality Subcommittee the ASQ Research Committee. In the next year, this project will conduct a survey of all attendees of the Fifth Global Forum on Reinventing Government (held in Mexico City during November 3-6, 2003) to analyze the operational definition of quality in government and discover best quality practice and national policies that drive

macro-economic and micro-economic quality improvement. The survey inquires about the approach taken by the universe of governments that have chosen to pursue quality methods in order to discover a pattern of prevalent activities, best practices, and methods that may be pursued by other states. The outcome of this study will be a final report describing the survey results. In the following year, the focus will shift from the survey to discovering best practices in each of the key focus areas was discovered in this investigation. The outcome of this second year's work will be a 'model' national quality policy based on best practices and a supporting measurement system to evaluate the effectiveness of this policy.

APPENDIX A – QUALITY IN COMMERCIAL ENTERPRISES

LINKAGE OF BUSINESS WITH GOVERNMENT

As the world begins a new century, it is appropriate to review national economic and industrial policies. These policies contribute to the well being of a nation through their ability to stimulate that growth of local industries that are the foundation of a nation's gross domestic product. National policies in these two topics establish the framework and infrastructure within which private firms exercise competitive decisions from which a nation derives its economic growth. For public government to determine the structure of its economic and industrial policy it is necessary that it have a sound theory for how private firms grow and expand their business. Macroeconomics and microeconomics are not independent subjects – they operate together as a dynamic system. One thesis of this paper is that quality is a key driver for economic expansion, as measured by productivity growth and profitability. The impact of government's macroeconomic policy is particularly strong when it creates a national infrastructure within which its private sector firms can maximize their microeconomic growth. When quality drives microeconomic growth, it must also become part of national macro-economic and industrial policy. Determining the proper role of quality in these two dimensions requires an understanding of the dynamic interaction between business and government that creates the possibility for broad microeconomic success – the initial point for departure is to measure the value contribution of quality from the perspective of the nation's microeconomic structure.

ECONOMIC VALUE – FUNDAMENTAL BASIS FOR BUSINESS.

Economics describes how society uses scarce resources to produce valuable commodities and distribute them for the use of society. Production of goods and services responds to choices made by individual consumers in a market when they select from the competing choices based on their perception of the relative value of the set of alternative offerings. The consumer's choice is made based upon a fundamental understanding of the value proposition – that the quality of features (for either goods or services) of a given product are superior to its given price point over other available choices [this of course assumes that markets behave like rational people]. How does a firm produce this type of value? It provides products or services that meet or exceed the customer's requirement better than its competitors at a price point that represents value to the potential customers (it is considered to be 'worth what they pay for it') which is perceived as acceptable by customers when compared with the alternatives. In a commercial environment this may be summarized using the phrase 'better, faster, and cheaper.' However, when a value proposition is stated this way many government officials react in the belief that this way of thinking does not apply as they have no profit dimension in their operating model. In a purely 'capitalist' economy a customer has freedom to choose all goods and services – a luxury that is not afforded to most customers, as government tends to mandate which of its services are required and therefore are not allowed to compete with any potentially competing free market alternatives. Most government services have 'latent competition'

in the form of free market services that would compete, if the government removed this mandate for required services.

QUALITY FOCUS ON INNOVATION AND DISCIPLINE.

What is the role of quality in global economic expansion? Quality is one dimension of the relative value proposition for competing goods and services. It is delivered by private and public organizations based upon their knowledge of their targeted customer's underlying need-based value proposition and the organization's inherent ability (or core competence) to consistently work at a satisfactory level of performance that satisfies the enduring value proposition of its customers. When quality is not delivered consistently over time, then all stakeholders in the organization lose: customers don't have their needs met and waste their resources by inappropriate expenditure for value-not-received; suppliers waste their production capability on product lines that don't produce high-volume sales; employees waste their investment of their life energy and time in the conduct of work that does not offer long-term economic security, and shareholders lose in the economic value of the firm as the initial promise of future potential return on their investment never becomes realized. Indeed, as Taguchi theorized, all of society loses. To prevent these types of loses organizations must first focus on innovation in order to drive quality into the designs of their goods and services – to meet the present and enduring needs of their customers. Another imperative for organizations is to build disciplined work processes that will assure consistency in the organization's performance over the time in the delivery of these goods and services as it engages its customers. In order to meet both of these conditions for a sustained period of time, organizations must also meet a third condition: effective governance – the ability to set and execute policy that is enacted by superior managerial competence in order to achieve a persistent vision and implementing business strategy.

VALUE ENTITLEMENT MUST BE DYNAMICALLY ADJUSTED.

At the base of these business theses is the assumption that customers are entitled to value in exchange for their purchase or receipt of goods and services. This thesis fundamentally assumes economic entitlement – the goodness of the purchases must be acceptable to the customer or else the purchase would not have been made. But, this assumption can be challenged when the perceived value of the goods or services over the long-term is either unknown or based on a probabilistic inference. The customer's value entitlement must be dynamically adjusted based on the customer's experience with goods or services and the market reality of competitive offerings for alternative products. A choice once made is not a choice forever. Customers have been observed to consistently increase their level of performance expectation based on their present experience with goods or services. For example, the Model T Ford that satisfied customers in the beginning of the last century does not even come close to meeting expectations at the end of the same century. As the introduction of technology grows at an exponential rate at the end of this century (witness

Moore's Law [10] as applied in the semiconductor industry), the mere discovery of emerging technologies drives customer expectations regarding its application and introduction into commercial products. Thus, the requirement for quality performance is often driven by innovation – the need to identify, embrace and adapt new technologies into customer-focused applications. Technology is a key driver in the determining the customer and market value proposition. Companies that intend to sustain their market position must continuously innovate to assure that they will be full participants in the next round of market dynamics created by new and emerging technology.

CUSTOMER EXPERIENCE CREATES CONSUMER LOYALTY AND BRAND VALUE.

There is a second dynamic that is important in assuring economic expansion: the implicit expectation that is borne through the customer's relationship with an organization – the total value of their experience. Customers who experience consistent performance with their suppliers of goods and services build trust in the ability of these organizations to meet their needs and to fulfill their market promise or value proposition. Such trust is the foundation for consumer confidence either when products fail or services are not properly delivered. Trust is build up over a long period of time – it is an accumulation of the life experience with a product or service – but it can be destroyed through a poorly managed event or an exceptionally bad experience. Thus successful enterprises must focus on both the initial value proposition that is delivered to customers as well as on the sustainability of that value proposition through continuous attention to the needs of the customer as a product is used over time or a service is delivered over time. Customer loyalty, the fact that customers continue to repurchase goods and services based on their prior experience, is the result of excellence in execution during the prior experience as well as credibility of the offering's value proposition based on the customer's past experience with value delivery by the enterprise. On the other hand, customer satisfaction focuses on the individual event as the interaction with a consumer unfolds at a 'moment of truth' – the point of communication between producer (or their agent) and the consumer which develops at each and every relationship point with the consumer or their organization (this includes both the user of the product as well as the economic buyer of the product). Customer satisfaction surveys will measure the instantaneous perception of the value of this relationship. However, while customer satisfaction is a measure of the instantaneous value of customer experience, brand value indicates the enduring or long-term effect of the consumer's experience over time – the inherent premium that is perceived due to an organization's past performance that has established the consumer's expectations of the organization's ability to perform in the future. Past consumer experiences build customer confidence in the organization that subsequently creates a greater tolerance to market pricing differences – leading to higher brand value. In short, loyal customers – those

[10] Moore's Law is attributed to Intel semiconductor pioneer Gordon Moore who proposed that the data density of semiconductors doubles approximately every eighteen months. The implication of this "law" is that one of the competitors will continue to innovate at this rate so that no enterprise that wants to remain in the industry can afford the luxury of 'cashing in on a successful product' – continuous innovation is the only alternative for sustained success. Everett Rogers made similar observations about the diffusion of technology regarding the acceptability of hybrid corn to the agricultural market. Rogers observed that there was a pattern of resistance to new product concepts which he built into a model to help better understand the dynamics of new technology on the market.

customers who have highly positive experiences – create brand value based on their long-term relationship with a firm's products and services. However, this is a competitive customer engagement process that requires the continuous pursuit of excellence in the customer's experience in order to enjoy a long term advantage.

SUCCESS IN BUSINESS REQUIRES SUSTAINABLE PERFORMANCE.

The logical conclusion of these observations is that sustainable customer experience is the key to continued profitable growth. Since markets are formed from collections of customers, one key to growth is to focus on the 'atomic' level of the market – each of the individual customers – as a strategy for assuring sustainable business success. As the former CEO of General Electric, Jack Welch once said: "the obligation of the CEO is to deliver profits in the short-term and strength in the long-term." Short-term performance that undermines long-term capability is symptomatic of an organization that is declining in performance, not one that has the promise of enduring success. Long-term strength without short-term profits is a formula for bankruptcy. Both short-term profit and long-term strength are requirements for continuing success.

SUCCESS IN BUSINESS REQUIRES EXCELLENCE IN EXECUTION.

Market leaders not only establish strategies for the long-term, they also exhibit discipline in their short-term way of working – focusing on delivering profitable performance by analyzing and understanding the business that they are in and paying attention to the details – doing the work that must be done on a daily basis to ensure achievement of objectives. The best of performing organizations are exceptionally focused on the drivers of results and most of the actions that drive results are on the side of deploying an approach rather than defining the strategy to be achieved. A key reason for building consensus and using participative management is that the entire organization must be engaged to execute an aligned plan of action that delivers an overall strategy. Using a sports analogy, judging how well the follow-through occurs is the best way to evaluate the effectiveness of 'strategic advice' from a coach.

APPENDIX B – OPERATIONAL DEFINITIONS

CONCEPTUAL FOUNDATIONS

The approach taken for defining quality is to formulate an operational definition from the point of view of its application in the government. What is an operational definition? Operational definitions provide clarity of meaning in the terms that are used to describe a word. An operational definition is a precise description that assigns meaning to specific characteristics of communication in a way that eliminates ambiguity and assures clarity in the communication process so that the original message, transmitted by one individual, is received and interpreted by a second person without distortion in the intended meaning. The two elements of an operational definition are identification of the logical sub-groups included in the phrase or term that is used and the establishment of logical boundary conditions that set the limits on the way these sub-groups are applied (hopefully linked to a system of measurement). Once an operational definition has been established and communicated throughout its community of users, the term that it defines can be used with assurance of a commonly held meaning. Thus operational definitions remove ambiguity and assure everyone has the same understanding (a common language) about the term and its usage (as well as the limitations of its usage). Whenever possible, operational definitions should be measurable and should identify what to measure, the limits of data collection and the process for reporting and interpreting meaning from the results of the measurement in a way that assures that the interpretation is repeatable and reproducible across the community of users.

An example may help to clarify this concept. For instance the phrase "on-time delivery" appears to be quite specific on first inspection. However, what does 'on-time' mean – is it allowable to be early or late and still be on-time – as in a window of opportunity for the delivery? What is meant by the term delivery? Is it measured on receipt of the shipment or upon inspection of the shipment to assure it is good? Is it measured at the point of the shipment or the delivery? Are the means of shipment important enough to be specified? For instance, is "on-time" at any cost an acceptable way to execute this phrase? Clearly this phrase has a number of logical sub-groups: the meaning of on-time, the specification of location for delivery, the means of delivery, the cost of the shipment mode and the utility of the delivered item. An operational definition would take each of these elements and specify a meaning so the phrase "on-time delivery" can be understood without ambiguity. For instance: "on-time delivery" means the arrival of the specified quality-level of a product at the receiving dock of the company using contract-specified shipment methods at the budgeted cost of transportation no more than two days prior to the specified arrival date and no later than on the specified arrival date. Yet, even this definition requires the fixing of quality-level, contract-specified shipment methods, budgeted cost and specified arrival date in order to have agreement on the application of the term. Once these extra items are clarified, then we are close to an operational definition. The final item requires testing to assure that the meaning is the same from all perspectives by all users of the term. For instance, what is the required date that is used when the specified arrival date changes? Surely the new arrival date would be used; however, can arrival date be changed at any time prior to the shipment? Perhaps there

also needs to be a logical condition that freezes the shipment specification for accepting changes, in order to allow for performance – such as a lead-time in which changes are acceptable and used to refine the definition of "on-time" as well as to reject changes that are within the performance window as requiring expediting and no longer covered by the original terms of the contract. Taking this viewpoint of the phrase "on-time delivery" allows for anticipation of a corrective action – late changes to the order requiring non-standard delivery modes in order to meet the required date and thus voiding one element of the operational definition – budgeted cost – while perhaps also specifying the party responsible for the transportation cost variance. Once all of the parties using the definition are satisfied of it's meaning, as well as the modes in which it may change, then a true operational definition has been formulated.

How does this approach apply to defining quality in the context of national governments? In order to begin the pursuit of this definition, a perspective must be established for the interpretation of both the terms government and quality. The governmental form that will be used for this definition is that of a democracy, or rule by the people, which is the most dominant form of government today. Quality will be defined from a systemic perspective that encompasses society as a whole. This approach to quality will be further illustrated by the following two appendices. The remainder of this appendix will describe the core elements of a democratic value system.

THE VALUES SYSTEM OF DEMOCRACY

Of 192 nations, today over half could describe their form of government as a democracy or rule of the people and more governments are embracing this form of organization as the years pass. What does democracy really mean? According to ***Merriam-Webster's On-Line Dictionary*** (www.m-w.com), democracy lists several appropriate meanings:

> "Government by the people, *especially* rule of the majority; a government in which the supreme power is vested in the people and exercised by them directly or indirectly through a system of representation usually involving periodically held free elections; the common people especially when constituting the source of political authority; the absence of hereditary or arbitrary class distinctions or privileges."

What does it mean for people to participate in such a democratic system of government? How can a diverse population find a common denominator for establish such a common bond that allows them to work collaboratively for the mutual benefit of an entire society?

Private sector organizations begin their definition of their form of organization with the specification of their core values – the set of shared beliefs and philosophies that bind the organization together. In a similar way, the value system of democracy may be described as a starting point for building a shared understanding about how a government's management system should be constructed. A fundamental set of values for a democratic form of government could include the following elements:

- ***Vision***: democracies must develop a common bond through a shared aspiration or vision that engages the collective "We the people …" is a compelling way.
- ***Freedom***: belief in freedom is essential in a democracy, although this term may be operationally defined in very different ways from freedom of government interference or it may mean freedom to exercise specific human rights (e.g., voting, speech, right to bear arms, assembly, etc.).
- ***Equality***: equality, another essential ingredient to democracy, is also open to various interpretations. By "equality" some mean equal opportunity (access to the conditions that lead to personal success and the right to "pursue life, liberty and happiness" – the process by which one achieves life goals), while others mean actual equality in the results of life condition (e.g., leveled wealth, or economic parity).
- ***Stability***: stability assures that the system of government is consistent and it focuses on the need for rules and regulations to be reliably and consistently applied.
- ***Mutual Respect***: one core operating principle of democracy is "majority rule while continuing to respect minority viewpoints." This requires that all beliefs of a national community be considered in decisions that affect a nation and that minority views be respected as valid belief systems and positions rather than following a rule of power.
- ***Consensus***: consensus requires reciprocity – giving and getting – or negotiation – so that the views of all are heard and taken into account in making decisions affecting the community. In a consensus-based decision-making process organizations would hold open forums for people to express their views and beliefs about issues prior to a choice being made on their behalf by the representative government.
- ***Collaborative Participation***: All democracies embrace participation by its citizenry in the form of voting for representatives who legislate the rules of society and govern the structure that provides the support services of a central government. Other forms of participation are equal elements of democratic citizenship: joining the military for the support of the national defense, serving on juries to assure equal application of the nation's laws, and communicating with government and the press to express views or concerns about public issues.
- ***Future-oriented***: democracies serve both present generations and future generations and must enable anticipation of both the positive and negative driving forces of change to allow the government to establish preventive actions that block negative forces while encouraging the positive forces of change. [11]

QUALITY AS A DIFFERENTIATOR

While there are many governments that consider themselves 'democratic' there are varying degrees of success that they have achieved in the results of the livelihood of their people and the impact on their economic and social living conditions. When we observe various grades of results in products, such as in food products like eggs or meat, we tend to evaluate their quality using a graduated system that differentiates results. Likewise with governments we can differentiate between applications of democracy using a system

[11] This observation was stimulated by the thinking of Clem Bezold of Alternative Future Associates is acknowledged for providing this values based perspective to begin the discussion of quality in government. Another input came from *Approaching Democracy* Prentice Hall Publications [Website: http://cw.prenhall.com/bookbind/pubbooks/berman4/chapter1/objectives/deluxe-content.html - accessed 15 April 2003] at the suggestion of Mr. Bezold.

of graduated implementations of the infrastructure that supports the embraced values of the general form. These distinctions will be included in the demographic analysis of the respondents to our survey on government quality. To understand this differentiated quality model for democratic government it is essential to explain two basic concepts: system dynamics and the quality loss function. These topics will be described in the next two appendices to this report.

APPENDIX C – SYSTEMS THINKING

CONCEPTUAL FOUNDATIONS

System dynamics is a methodology to understand and manage complex social systems such as those found in business or government. In a dynamic system there are relationships such that "X" factors affect its output of "Y" which will in turn change "X" through a feedback mechanism. In this situation the relationship between X and Y must be considered together as their linkage defines how the system behaves. A clear use of this principle is found in the structure of the criteria for the Malcolm Baldrige National Quality Award. In the award criteria each of the practice areas identified in the category descriptions must be defined as an inter-related system. The dependencies of one area on another must be understood (e.g., what is the influence of the capabilities built through human resource focus on process management capability?) and a management system must be designed (the 'approach' taken by management) and integrated into the routine way that the organization works (the 'deployment' to the organization). Only when these key practices are defined, designed and deployed is it appropriate to evaluate whether or not they made a difference! Otherwise, the business improvements observed may be due to pure chance rather than the intervention of an astute management team.

MIT Professor Jay W. Forrester developed this approach for study through the use of simulation models that test hypotheses regarding the dynamic relationships. Forrester's concept of system dynamics is essential for understanding the impact of governmental actions as a control function for the nation they represent – from the economic, social, and fiscal perspectives. Another critical aspect of governments that must be understood is the set of relationships or dependencies between governmental actions and private sector actions. However these relationships are very complex and not simple linear dependencies; rather they are dynamic and interactive changing in form as well as magnitude as a function of external stimuli. Forrester's approach to system dynamics provides one way to understand these complex relationships and it may be applied to both the design of a business process as well as to its assessment using simulation or designed experiments to assess the potential impacts of systemic change. [12]

[12] The seminal works by Jay W. Forrester include both Industrial Dynamics (Portland, OR: Productivity Press, 1961) and Principles of Systems (Portland, OR: Productivity Press, 1991).

APPENDIX D – QUALITY LOSS FUNCTION

CONCEPTUAL FOUNDATIONS

Genichi Taguchi's concept of quality as a loss to society – is essential in considering the role of quality in government. When losses occur because work must be redone or the results are not produced as specified, the loss is not entirely borne internally to the group or organization that suffered the problem. There is an impact on the use of resources for society as a whole. In a world of scarce resources (arguably information and knowledge may not be included with physical resources in this statement); it is in the public interest not to squander these resources in ways that provide little or no value to society. When a company produces scrap in business that resource is lost forever – even with recycling there is a loss in terms of the energy consumed to produce the scrap and the wasted time of the people involved in making, and then re-making, the product. This is a waste of their time when the product should have been made right the first time – and time is a non-renewable resource in live. Even when a company stands behind its products with strong warranty or guarantees for performance, there is still a loss that occurs because their customers are wasting their time 'reworking' due to their inability to use the product or service on the first try. The loss grows as it affects more people once a product or service has been released to the public, so that the greatest loss is not the internal loss that is suffered by an organization that produced the product or delivered the service, but the loss that is due to the impact on its consumers. Taguchi's "loss function" identifies the importance of organizational actions on the use of society's resources. [13]

The Taguchi loss function is closely tied to 'the rule of 10's' used in Six Sigma analysis to evaluate the total impact of cost savings. According to this rule, the closer to the source that a problem is detected the least costly it is to correct. For example, when a problem is detected at the source it is an error that is least costly to correct. When an error escapes from its source and is passed on to the next step in a process – then more resources are required to detect and correct the defect. When the defect escapes from the organization that produced it and goes to the customer the cost accelerates exponentially as it takes more and more resources to detect and correct the problem. The rate of growth in the cost to detect and correct problems increases in a manner that each subsequent step where an escape has occurred is about ten times more expensive than the prior step to detect and correct the situation. This argument causes thoughtful managers to drive for 'quality at the source' of work and to build a self-inspection principle into work practice at each step of the organization's business process.

[13] Genichi Taguchi's seminal works include both: Introduction to Quality Engineering: Designing Quality into Products and Processes (Productivity Press, 1986) and Robust Engineering: Learn How to Boost Quality while Reducing Costs and Time to Market (New York: McGraw-Hill, 1999).